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more of formation names of my own invention utilized in Mr. Gordon's article without credit, at least, attest that the studies of the Texas Cretaceous by me left some impress upon the subject.

ROBT. T. HILL

#### THE DAYLIGHT SAVING BILL

TO THE EDITOR OF SCIENCE: On page 453 of SCIENCE for March 19, 1909, a reference to the "Daylight Saving Bill" is introduced by the statement: "It is said that the Ohio state legislature once passed a bill establishing the value of  $\pi$  to accord with the views of some circle squarer."

A declaration beginning "it is said" is usually safe against correction, because anything may be "said," but in this instance I am moved to say that the laurel wreath has been put upon the wrong brow.

It was in Indiana, nearly twenty years ago, that such a bill was introduced by a member of the state legislature, but it was "laughed out of court," after making some progress in the lower house, as such measures often do where not much attention is given to the real meaning of every bill put upon the calendar. As far as I know, the legislature of the state of Ohio has not yet concerned itself with the ratio of the circumference of a circle to its diameter. After all, a good deal may be said for a state legislature that has devoted even a brief hour to an intelligent consideration of the value of  $\pi$ , and a careful investigation might show that the ability to do this is by no means restricted to regions east of the Allegheny Mountains. It is a well-known fact that of the Presidents of the United States serving within the last half century (barring one recently retired, who forms a class by himself), the two who were most appreciative of the work of scientific men and most capable *by reason of their own knowledge and experience*, of determining its value, were chosen, one from Ohio and one from Indiana, while that one least so was from the great Empire State. The record of the "middle west" in this respect is sure to be maintained during the administration just now beginning.

It is a serious mistake to put the author of the daylight saving bill in the same class with the circle squarers. The measure has been given much attention by all of the best English newspapers and periodicals during the past year and, with few exceptions, the criticisms have been most favorable. The passage of the bill has been urged by a very large number of eminent Englishmen, including many of the most distinguished men of science, and the advantages its adoption would secure are so many that it seems tolerably certain to receive the approval of parliament in the not distant future.

T. C. M.

DRESDEN, GERMANY

#### LIBRARY BOOK-STACKS WITHOUT DAYLIGHT

TO THE EDITOR OF SCIENCE: I was greatly interested in the short abstract of Mr. Bernard R. Green's address on "Library Book-stacks without Daylight," which appears in SCIENCE for April 9, 1909, p. 592.

I remember very well probably five or six years ago a conversation that I had with Mr. Green in connection with the new library building of the College of Physicians of Philadelphia, when I made the following suggestions, which I would like to put on record for the consideration of others.

It seemed to me that the ideal book-stack should be built with solid brick walls without any openings of any kind, and that even in the roof there should be no skylight and no openings except for the chimneys and ventilation. Artificial light could be turned on and off at will and would provide amply and inexpensively for the light. Forced ventilation would keep the air pure. This method of construction would have the following advantages:

1. A wall of solid brick is much cheaper than one with openings for windows, which must be filled with expensive wire glass, to which must be added the cost of iron shutters, with some automatic device for their closure.
2. It is a much better protection against fire.
3. It excludes all dust.
4. The book-stacks can be placed in the

stack-room at any distance; farther apart or nearer together, as required, irrespective of their relation to daylight through the windows.

5. As Mr. Green has pointed out, daylight is injurious to books.

6. The temperature of the room will be more equable, the internal heat being retained in the winter, and the external heat being excluded in the summer.

I hope, if this commends itself to architects and librarians, that some day the board of directors of a library may act upon it. The only drawback that occurs to me is that architecturally it would not be attractive in appearance, but as the book-stack is usually in the rear of the building and more or less hidden from view, I think this would not be a very serious objection.

W. W. KEEN

PHILADELPHIA,  
April 30, 1909

#### SCIENTIFIC BOOKS

*The Thirteen Books of Euclid's Elements Translated from the Text of Heiberg with Introduction and Commentary.* By T. L. HEATH, C.B., Sc.D. Cambridge, University Press. 1908. Three vols.

*Differential and Integral Calculus.* By DANIEL A. MURRAY, Ph.D., Professor of Applied Mathematics in McGill University. New York, Longmans, Green and Co. 1908. Pp. xviii + 491.

*An Elementary Treatise on the Differential Calculus Founded on the Method of Rates.* By WILLIAM WOOLSEY JOHNSON, Professor of Mathematics at the United States Naval Academy, Annapolis, Maryland. New York, John Wiley and Sons. 1908. Pp. x + 191.

In these days of prolific writing when even the worst books (if indeed such a lower limit exists) must be "noticed" and the best, owing to consequent lack of space, may not be really reviewed, one is at a loss to know how properly to signalize the appearance of so important and excellent a work as this latest production from the pen of Dr. Heath. Of this work it is safe to say—and that is much—that no other better illustrates the great service of British scholarship in rendering the

ancient classics accessible and attractive to our time, and no other better illustrates the truth of Cousin's *mot: La critique est la vie de la science*. No account of the work can be bad if it has the effect of inducing the reader to procure a copy for himself, and no account can be good if it have the opposite effect. For students and teachers of mathematics or of philosophy, this edition of the "Elements" may be said to be indispensable.

It is only after examination of the volumes that one can realize how utterly impossible it is to convey in a few lines anything like an adequate conception of the riches that Dr. Heath has given us. Nevertheless, a few hints—the meagerest of indications—must be given. The introduction, which occupies more than a third of the first volume, is composed of nine chapters, entitled Euclid and the Traditions About Him, Euclid's Other Works, Greek Commentators other than Proclus, Proclus and his Sources, The Text, The Scholia, Euclid in Arabia, Principal Translations and Editions, and (ninth chapter) On the Nature of Elements, Elements Anterior to Euclid's, First Principles, etc. Of the man Euclid, as of many another great determinator of the world's career, but little is known, and the chapter on Traditions, though it furnishes nothing new, is valuable as collecting, sifting and citing the literature of the old. One of the traditions, whether or not it be true in fact, is at all events true in spirit, and will be relished by that variety of practitioner engineer who views mathematics as he views a wheelbarrow or a spade. "But what shall I get by learning these things?" said a pupil to Euclid after learning the first theorem. Thereupon Euclid called his slave and said, "Give him threepence, since he must make gain out of what he learns." The late Sylvestre, it is remembered, on being asked to state the "use" of the theory of substitution groups, on which he had been lecturing, replied, "I thank God that, so far as I know, it hasn't any." It would be interesting to know what proportion of scientific men are aware of the fact that Euclid wrote several scientific works other than the "Elements," as the hopelessly lost "Pseudaria," said by Proclus to be "by way